REMARKS

Claims 23, 24, and 32 have been amended.

35 U.S.C. §112 rejections

With reference to page 2 of the Office Action, claims 32 and 37 were rejected under 35 U.S.C. 112.

Claim 32 has been amended to be dependant to claim 31. Claim 31 recites the use of one or more optical elements and so there is antecedent basis for the use of the term "optical element" in claim 32. Although not objected to by the Examiner, the Applicant has also amended claims 23 and 24 to be dependant on claim 22 and so ensure they have correct antecedent basis.

Claim 37 has been objected to as being indefinite. The Applicant respectfully submits that, just as the space forming the sheath can be occupied by a material such as PTFE or a fluid as set out in claim 38, it can also be occupied by air. The requirements to encapsulate a volume of air within the sheath would be no different to those of a fluid and would require a simple enclosed type of structure

such as would be well understood by a person skilled in the field of this invention.

35 U.S.C. §102(b) rejections

Claims 1, 6, 8, 12, 18, 32, 35-36, and 38 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sugiyama et al. (US 6,169,836). Applicants respectfully traverse this rejection.

The Examiner referred to figures 3-4 of Sugiyama as disclosing a side-scattering light guide comprising, amongst other things, a metal layer. The Examiner asserts that this metal layer diffuses light and therefore anticipates the Applicant's use of a "jacket of diffusing material" as claimed in claim 1. The Applicant respectfully disagrees. A diffusing material must diffuse the light as opposed to simply reflecting light as taught by Sugiyama.

Additionally, Sugiyama discloses the use of light-scattering particles, but does not teach those particles as being transparent, having a refractive index close to that of the core, high optical transmittance, low back reflectance and low absorbance. In fact, many of these

characteristics cannot be provided by the materials disclosed in Sugiyama. There is nothing to suggest a transparent characteristic or each of the other characteristics all being present. Therefore, since each and every element of the invention as claimed in claim 1 have not been disclosed by Sugiyama there can be no anticipation. Withdrawal of the rejection is respectfully requested.

Claims 6, 8, 12, 18, 32, 35-36, and 38 depend from claim 1 and are believed to be in condition for allowance for the same reasons.

Sugiyama contemplates the use of foils or sheets of metals such as silver and aluminium. These metal sheets or foils are reflective only and do not diffuse light. All of the teaching in Sugiyama, in relation to the "reflective protection layer", is that the reflective properties of this layer allow a certain "directivity" to be imparted upon the emitted light. This is the sole purpose and disclosure of the use of this layer.

The "jacket of diffusing material" as claimed in claim 1 of the present application, on the other hand, can fulfill

a variety of different roles. Page 7, lines 14-16 of the present application set out, in relation to FIG 1, that the diffuser jacket is a "translucent diffusing material" and has "high transmittance". The metal layer of Sugiyama would clearly not have a high transmittance nor be translucent and, as set out above, is not diffusing.

Further, page 8, lines 18 and 19 set out that for this kind of device "a high degree of reflectivity in the diffuser is not ordinarily desirable". The teaching of this embodiment of the Applicant's invention is clearly away from the use of a reflective material such as that disclosed by Sugiyama. It is also contemplated that the translucent material making up the diffuser jacket may be replaced by a transparent material without substantially changing the results (page 9, lines 1-5). This teaches further away still from the use of Sugiyama's metal sheet, reflective layer.

The present application does teach that in another embodiment of the invention the diffuser jacket may be opaque and reflective but the jacket is still capable of diffusing light (page 9, lines 8-10) unlike Sugiyama's metal sheet. Even in this instance, it is stated as being

desirable in many applications to also use a transmitting diffuser in conjunction with the opaque reflective diffuser to allow the production of light of superior quality over that obtained with the reflective diffuser alone.

The light emitted by Sugiyama's device containing the reflective layer will be forward focused and this directionality is stated as a desired outcome. As mentioned above, even when using a reflective portion as part of the diffuser jacket, the present invention teaches the use of a transmitting diffuser in combination in order to obtain better results. The deficiencies of a reflective portion alone are also overcome by the use of an apertured opaque reflecting diffuser jacket at page 10, lines 3-12.

Page 10, line 23 through to page 11, line 4 of the present application sets out that a purely specular reflecting surface, such as is the case with the metal sheet of Sugiyama, would give increased output but suffer from the drawback of only emitting strongly forward focused light. The reflective surface of the present invention has diffusion properties and the use of the transmitting diffuser, or, apertures in the reflective diffuser where,

after many reflections each imparting a small diffusion, results in light of an improved appearance.

On a further point, the Examiner asserts that the light-scattering particles 3 of Sugiyama disclose those in the present application. Claim 1 of the present application sets out that the diffuser particles must have "a refractive index close to that of the core". The light-scattering particles of Sugiyama have a significantly different refractive index from that of the core material as discussed on page 1, lines 12-17 of the present application and so this element is not anticipated by the Sugiyama patent. The importance of this similarity in refractive index is set out in some detail from page 3, line 19 to page 4, line 6 of the present application.

In light of the differences between the diffuser jacket of the present application and the reflective protection layer of Sugiyama as well as the refractive properties of the diffuser particles, the Applicant respectfully submits that all claims are novel over the disclosure of Sugiyama.

35 U.S.C. §103 rejections

Claims 3, 5, 9-11, 15-16, 19-21, 28, 31, and 37 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Sugiyama et al (US 6,169,836). Applicants respectfully traverse this rejection for the reasons stated previously and for the following resons.

The drawbacks of the invention disclosed in the Sugiyama patent have already been discussed. Due to its scattering particles having a significantly different refractive index from the core material the scattered light produced has an aesthetically unpleasing appearance. It also teaches the use of a reflective protection layer as a means of achieving directionality of the emitted light which has the drawback of only producing light which is strongly forward focused.

The Applicant has disclosed a number of ways of overcoming the problem of this forward focused light involving the use of the diffuser jacket. This jacket may be partially or wholly of a translucent or transparent material as claimed in claims 15, 20-21, and 22-24. It can be made of an opaque and reflective diffusing material and is then used in combination with a transmitting diffuser or

is apertured to avoid the problem of forward focused light and so, overcome one of the drawbacks of the Sugiyama patent. These elements and characteristics are not taught or suggested by Sugiyama, and are not simply matters of material choices because they are intended to solve problems not recognized by Sugiyama and therefore cannot be said to suggest an answer.

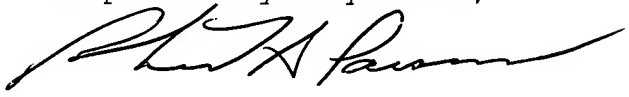
As already explained, to a large degree the present application teaches away from the use of a reflective surface and when this type of surface is used, it is still capable of diffusing light and is used in combination with other techniques to produce a better result.

The disclosure of the Sugiyama patent strongly teaches towards the use of a purely reflective surface such as the sheet of metal. It gives no direction as to how to overcome the problem of the strongly forward focused light and, indeed, does not even acknowledge this as being a problem or at least a severe limitation. There would, therefore, not have been any motivation on the part of the skilled addressee to try and nor would it have been obvious how, to make the side-scattering light guides of the present invention.

In view of the foregoing amendments to claims 22, 23 and 32, all claims should be clear and have correct antecedent basis. In light of the arguments presented above, it is submitted that all independent claims and the claims dependent thereon are both novel and non-obvious to a person skilled in the art at the time the invention was made in light of the prior art of record.

It is submitted that each of the claims is in condition for allowance. Withdrawal of the rejections and allowance of the claims is respectfully requested. Should there be any questions or remaining issues, Examiner is cordially invited to telephone the undersigned attorney for a speedy resolution.

Respectfully requested,



Robert A. Parsons
Attorney for Applicant
Registration No. 32,713
CN 29370

15 December 2006
4000 N. Central Ave. Ste. 1220
Phoenix, Arizona 85012
(602) 252-7494